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Formation of conserved charges and deformed extra space

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Abstract

© 2018 World Scientific Publishing Company. We discuss charge conservation responsible for internal symmetries other than the gauge ones. As a basic ingredient of our study, we consider a compact symmetrical extra space. Excited states of extra space are described in term of the internal momentum. We show that this latter quantity is conserved when an appropriate symmetry of the extra space is considered inducing, as a byproduct, charge conservation at low energies. As a matter of facts, this mechanism could be responsible for baryon asymmetry of our universe. The subsequent symmetrization process, which takes place during first stages of universe evolution, determines the extra space momentum conservation and the observed charge invariance on the four-dimensional subspace.

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Keywords

baryon asymmetry, Cosmology, early universe, extra dimensions, gravity

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